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A Standard for the Transmission of IP Datagrams Over Public Data Networks

This RFC specifies a standard adopted by CSNET, the VAN gateway, and other organizations for the transmission of IP datagrams over the X.25-based public data networks.

An X.25 virtual circuit is opened on demand when a datagram arrives at the network interface for transmission. A virtual circuit is closed after some period of inactivity (the length of the period depends on the cost associated with an open virtual circuit). A virtual circuit may also be closed if the interface runs out of virtual circuits. An algorithm for managing virtual circuits during peak demand is given in [1].

STANDARDS

1.1 The first octet in the Call User Data Field (the first data octet in the Call Request packet) is used for protocol demultiplexing. The value hex CC (binary 11001100, decimal 204) is used to mean INTERNET PROTOCOL.

1.2 IP datagrams are sent as X.25 "complete packet sequences". That is, datagrams begin on packet boundaries and the M bit ("more data") is used for datagrams that are larger than one packet. There are no additional headers or other data in the packets.

1.3 Unless a larger packet size is negotiated, the maximum size of an IP datagram transmitted over X.25 is 576 octets. If two sites negotiate a large X.25 packet size (for example, 1024 octets), an IP datagram of that size is allowed.

1.4 Either site may close a virtual circuit. If the virtual circuit is closed or reset while a datagram is being transmitted, the datagram is lost.

GENERAL REMARKS

2.1 Protocols above IP, such as TCP, do not affect this standard. In particular, no attempt is made to open X.25 virtual circuits corresponding to TCP connections.

2.2 Features of X.25 not discussed in this document are not used. For example, interrupt packets and the D bit (indicating end-to-end significance) are not used.

2.3 Negotiable features (facilities) of X.25 are allowed. For example, sites are free to negotiate larger packet and window sizes.

2.4 Some sites, such as CSNET sites, may attempt to open multiple virtual circuits to a single site. Sites should attempt to handle such incoming calls gracefully: transmit on the additional circuits if possible and accept incoming datagrams from them, but do not accept the CALL REQUEST, only to immediately close the connection or ignore datagrams transmitted on such circuits.

REFERENCE

[1] Comer, D.E. and Korb, J.T., "CSNET Protocol Software: The IP-to-X.25 Interface", SIGCOMM Symposium on Communications Architectures and Protocols, March 1983.